SI Worksheet

4/7/2022

Agenda:

Kahoot 😊

Worksheet

1. An aerosol can contains 400.0 ml of compressed gas at 5.2 atm pressure. When the gas is sprayed into a large plastic bag, the bag inflates to a volume of 2.14 L. What is the pressure of gas inside the plastic bag?
2. Have you ever wondered what the pressure is under the glass bell jar when the vacuum pump is turned on? One way to measure it would be to see how a balloon changes when it is inside. At the beginning of the experiment you note that the volume of the balloon is 560.0 mL under standard pressure. When you turn on the vacuum pump the balloon grows to 780.0 ml. What is the pressure under the bell jar at this point?
3. If 15.0 liters of neon at 25.0 °C is allowed to expand to 45.0 liters, what must the new temperature be to maintain constant pressure?
4. Jennifer Aniston backup oxygen tank reads 900 mmHg while on her boat, where the temperature is 27 C. When she dives down to the bottom of an unexplored methane lake on a recently-discovered moon of Neptune, the temperature will drop down to –183 C. What will the pressure in her backup tank be at that temperature?
5. A gas occupies 900.0 mL at a temperature of 27.0 °C. What is the volume at 132.0 °C?
6. If you were to take a volleyball scuba diving with you what would be its new volume if it started at the surface with a volume of 2.00L, under a pressure of 752.0 mmHg and a temperature of 20.0°C? On your dive you take it to a place where the pressure is 2943 mmHg, and the temperature is 0.245°C.
7. A sample of argon gas at STP occupies 56.2 liters. Determine the number of moles of argon and the mass of argon in the sample.